

# PHENIX WEEKLY PLANNING



1/28/2010  
Don Lynch

# Ongoing Tasks for Run 10

## Task

Start Date

End Date

Install rack components in RPC3 N racks

in progress

2/28/2010

Attach cables to RPC3 N racks and to Detector  $\frac{1}{2}$  octants

in progress

2/28/2010

Install blower for RPC3N thermal control

in progress

2/28/2010

Send mass flowmeters out for recalibration (DC/PC, MuID, TOF.W)

In Progress

?

AH Crane 110 switch for lockout

In Progress

6/30/09

## PHENIX Startup Checklist Status

### Item

Responsibility

Status

Item 1: ESRC relevant items completed

Wood Stairs

Phillips

Post Start

Update Work procedures

Cirnigliaro, Lynch

Post Start

Item 4: HBD Mock Up

Lynch

After Run 10

Item 11: Fire Pull Box

Philips

Post Start

Item 12: Dumb Waiter

Lynch

Waiting For  
LSC Response

## This Week

PC1, DC, and HBD problems

Maintenance access day yesterday:

PC1, DC and HBD reaired successfully (?),  
RPC3N elctrical work continued  
BHSO electrical Safety Audit

Next Maintenance Access Day Feb. 10<sup>th</sup>

Run 10 Support continues

Future Upgrades support continues

Jets Finish 2<sup>nd</sup> in AFC championship game

TECHNICAL  
SUPPORT  
2010

Next Week:

No scheduled maintenance access

RPC Factory annual Review 2/5, 2:00 PM bldg 911

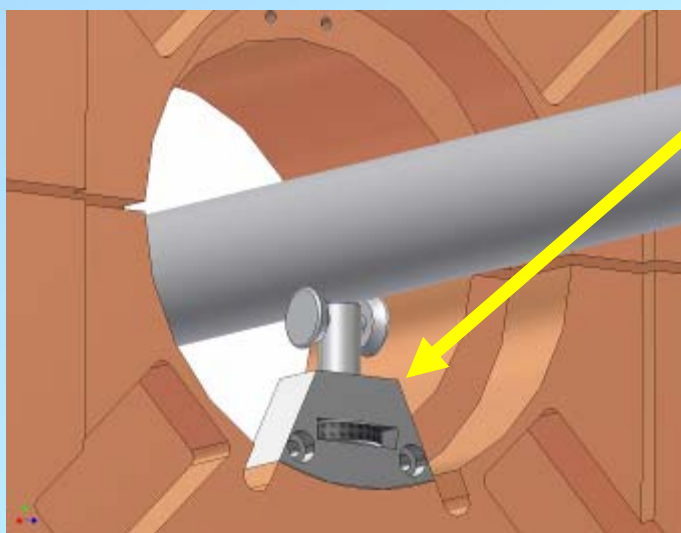
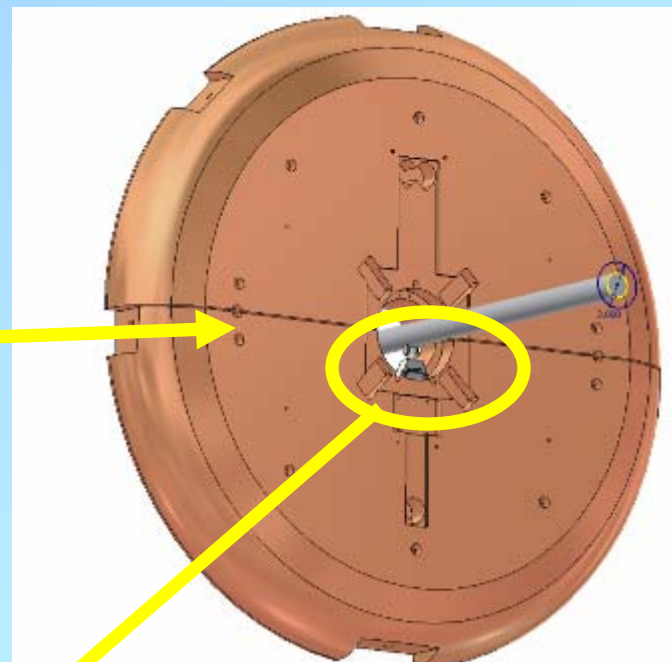
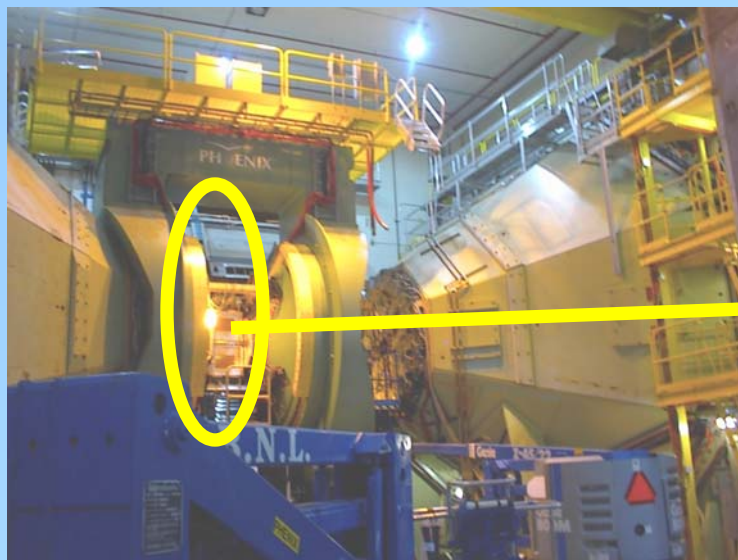
Run 10 tech support as necessary

2010 summer shutdown prep continues

Future upgrade support as necessary



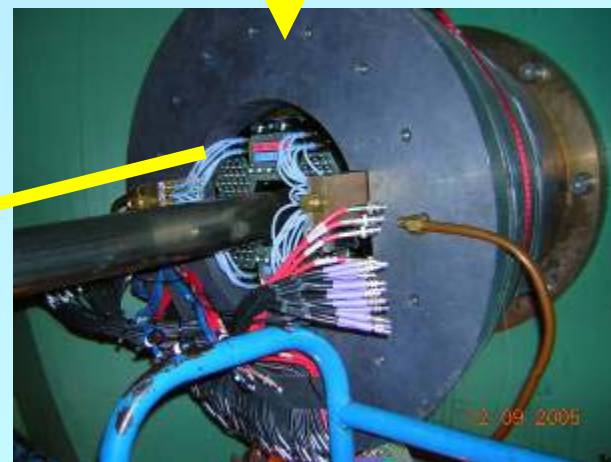
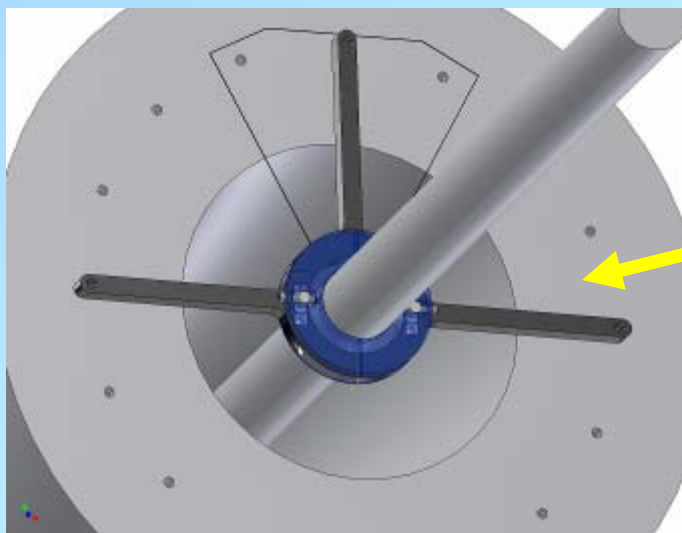
# CM central BP supports (2 req'd)

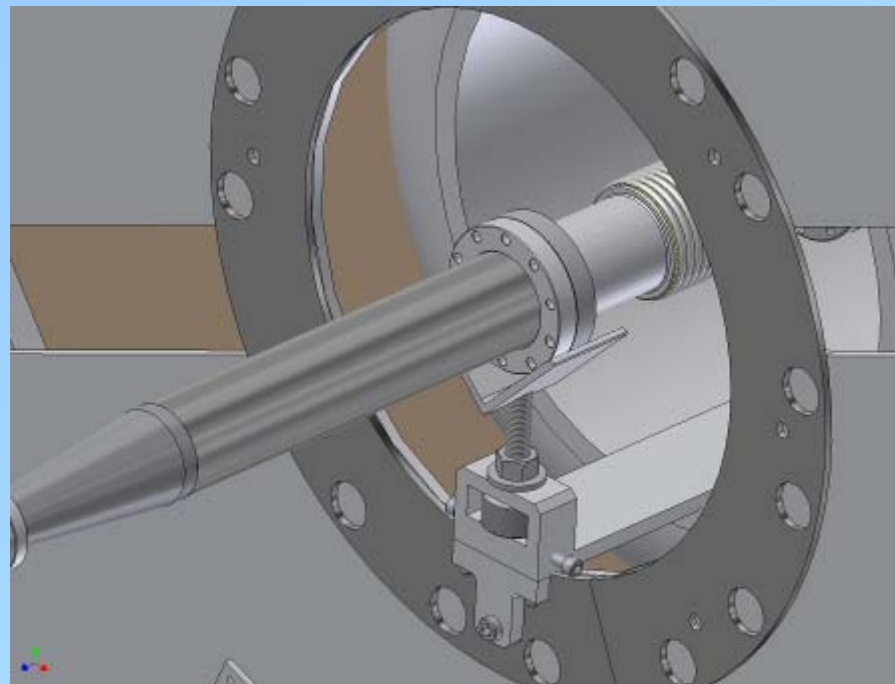




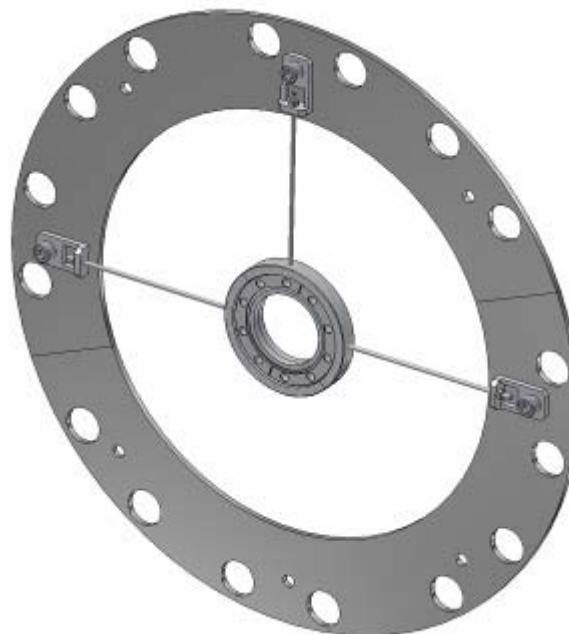
# South Flowerpot BP support

TECHNICAL SUPPORT NO-0





North MPC Cavity BP support

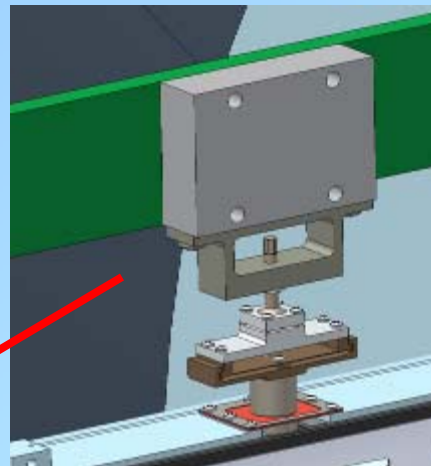
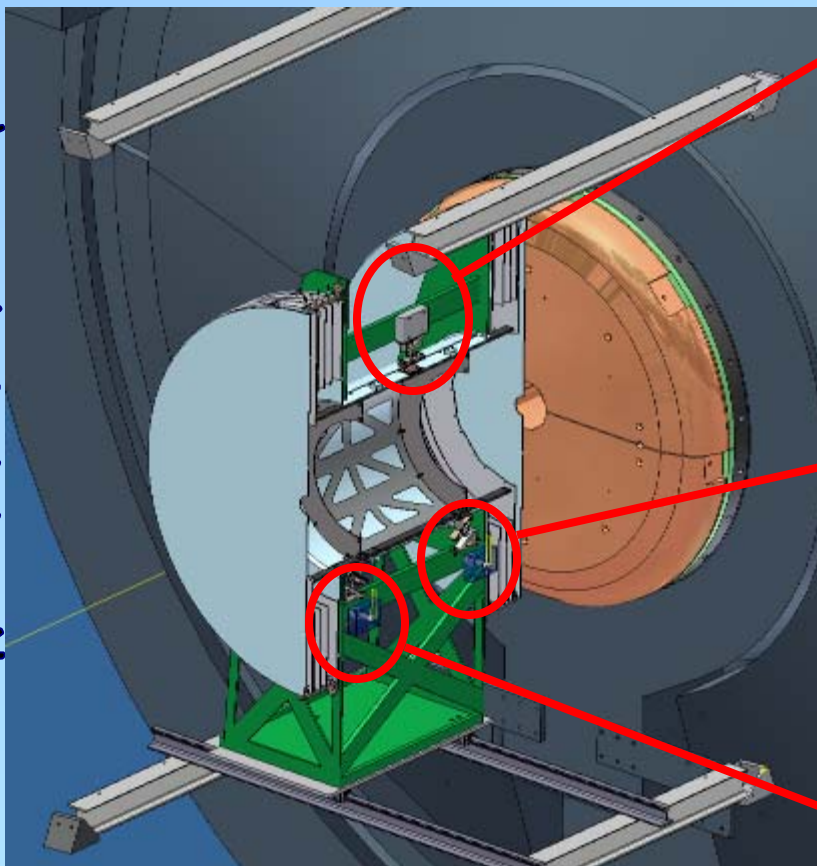


TECHNICAL SUPPORT NO-0

# VTX Installation Plan

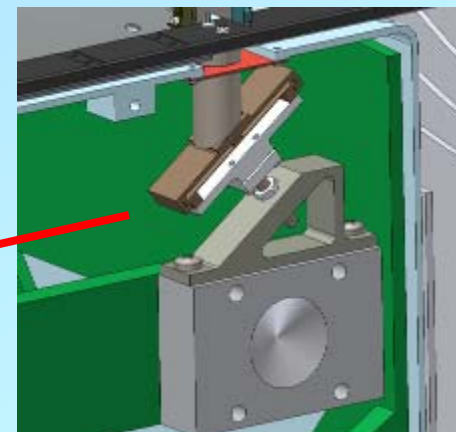
Kinematic mounts for mating east and west detector halves

TECHNICAL SUPPORT 2010

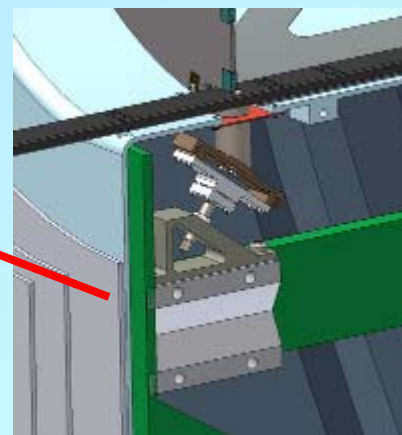


2 DOF (Y & Z)

0 DOF



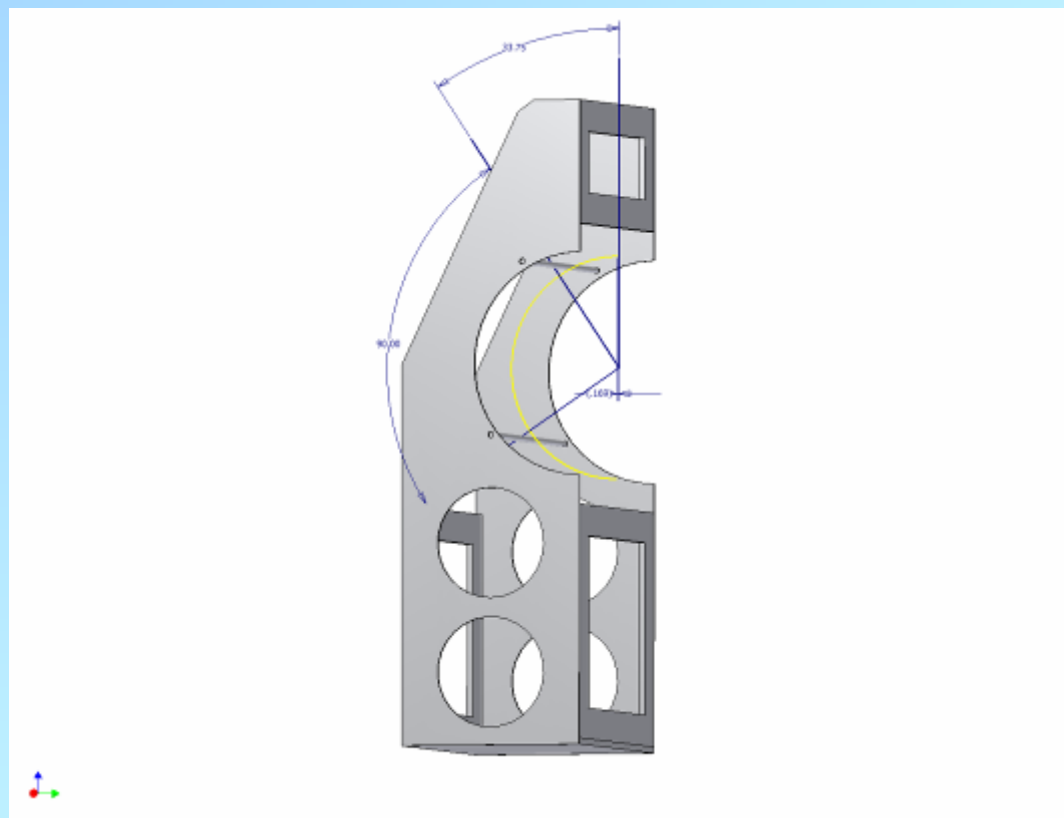
6 interface points  
w/ HYTEC



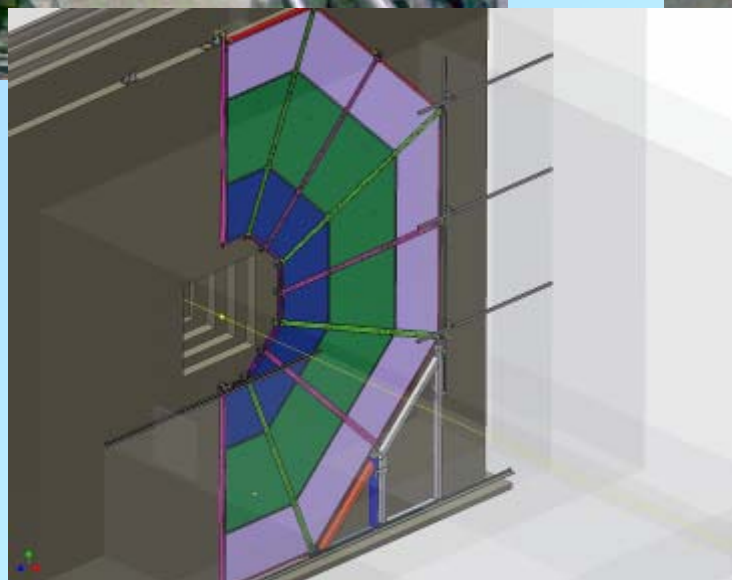
1 DOF (Z)



## VTX Support Structure Base Assembly Design In Progress



# RPC3 South Installation Plan



TECHNICAL SUPPORT NO-0

# 2009 Building Maintenance Issues

TECHNICAL SUPPORT 2010

- Roof leaks in utility bathroom at northwest corner behind tech offices, over door between rack room and assembly hall and over door between control room and elect. ass'y room.
- Heat wrap tape for trailer bathroom toilet drains to prevent freeze/clogging in winter.
- General maintenance for Trailer Offices (in progress)
- Trailer Office Modifications planning in progress



## 2010 Tasks

Start Date      End Date

Run 10	In progress	6/1
VTX Fabrication and Installation Plan (1st Draft)	Done	Done
RPC3 South Fabrication and Installation Plan (1 <sup>st</sup> Draft)	Done	Done
Receive New Beampipe	On Order	2/28
Design Beam pipe supports	In progress	1/29
Update RPC3 N design for RPC3 S	In progress	2/26
RPC Factory Annual Safety Review	Prep in Progress	1/31
Design support structure, alignment scheme for VTX	In progress	2/12
Fabricate beam pipe supports	2/1	5/1
Beampipe NEG coating (CERN)	2/1	5/1
Fabricate/procure parts for RPC3 S installation	2/1	5/1
Fabricate/procure parts for VTX installation	2/1	6/1
End of run 10	6/1	6/1
Prep IR for shutdown	6/1	7/1
Complete unfinished business for MuTrgr FEE & RPC3 North	6/1	8/1
Install Beam pipe	7/1	10/1
Install VTX	8/1	10/1
Install RPC3 South	6/1	10/1
2010 Shutdown Other Tasks	6/1	11/1

## PHENIX Procedure Review Current Status:

## 147 Procedures Identified

80 Made Inactive (not currently in use, will require revision to re- activate if and when necessary, available for reference purposes)

12 CAD procedures relevant to PHENIX, all are current and up-to- date.  
All currently under review,  
3 to be de-activated

40 PHENIX approved procedures.

1 is currently under review  
37 are current and up-to-date

(3 RPC procedures updated, 2 more in progress)

15 Proposed/Draft Procedures (never previously formalized)

New Spreadsheet Tracking Application to keep track of Procedure revisions and updates - Done and Working

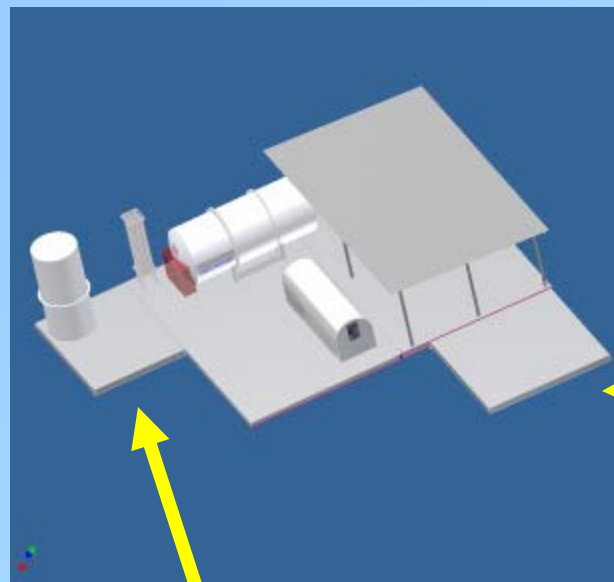
Web retrieval of latest procedures now available from PHENIX Internal:

[http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL\\_procedures.htm](http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_procedures.htm)



## New Argon Dewar and Empty Gas Bottle Storage Area

PHENIX



Pad for  
Empty Gas  
Bottles



Pad for argon  
Dewar



TECHNICAL SUPPORT 2010

1/28/2010

# **IR Issues for Future PHENIX Upgrades**

# Ongoing PHENIX Upgrades

- **HBD:** Installed and taking physics data in Run-10
- **MuTrg:** Fee now installed. RPCs installed in 3 stages 2009/2010/2011
- **VTX :** To be installed in 2010
- **FVTX:** To be installed in 2011
- **DAQ improvements:** Various components 2010-2012 (DCM II, LVL1, EvB Upgrade)

**These upgrades provide PHENIX with new physics capabilities that will have significant impact over the next few RHIC runs**

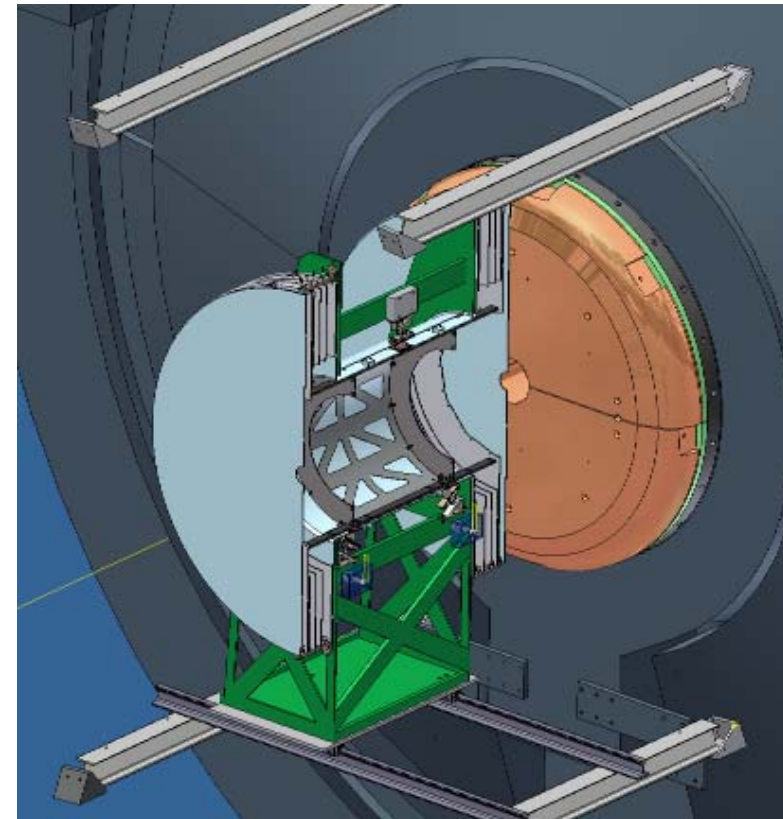
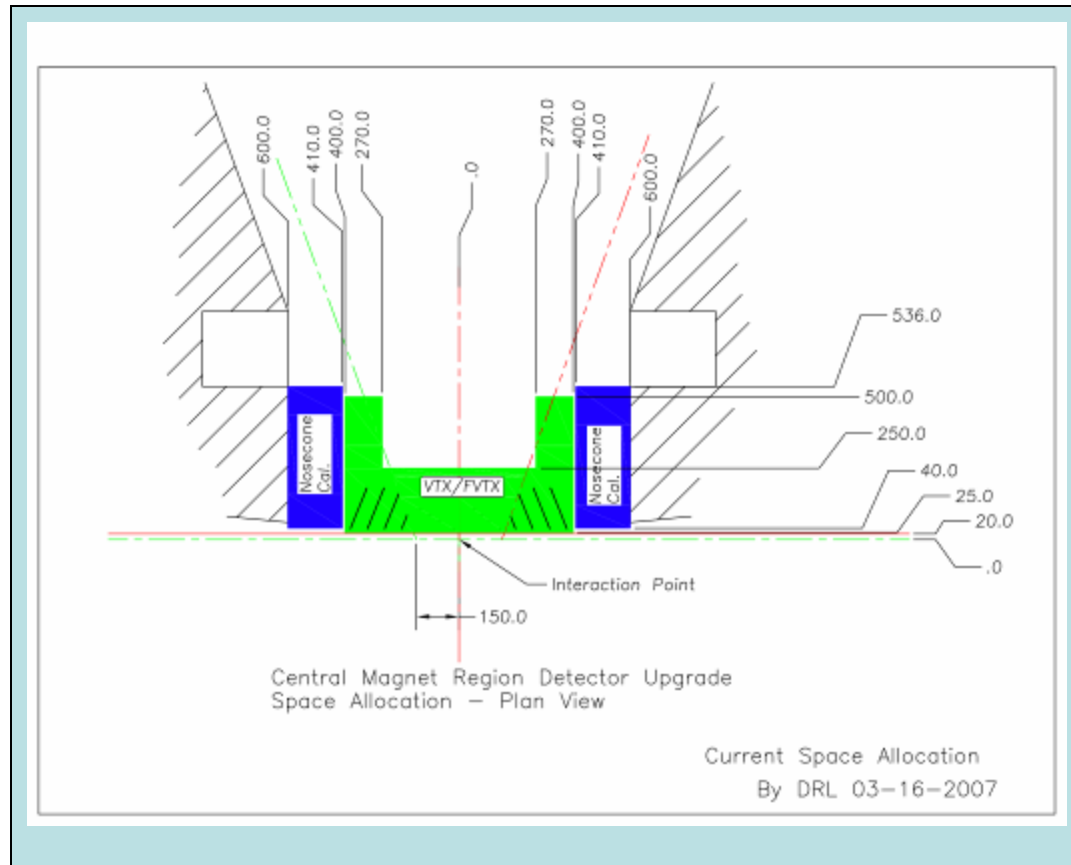
**They also come close to saturating space for both detectors and ancillary systems**

**How to accommodate large scale PHENIX Upgrades being envisioned for the next 10 years?**

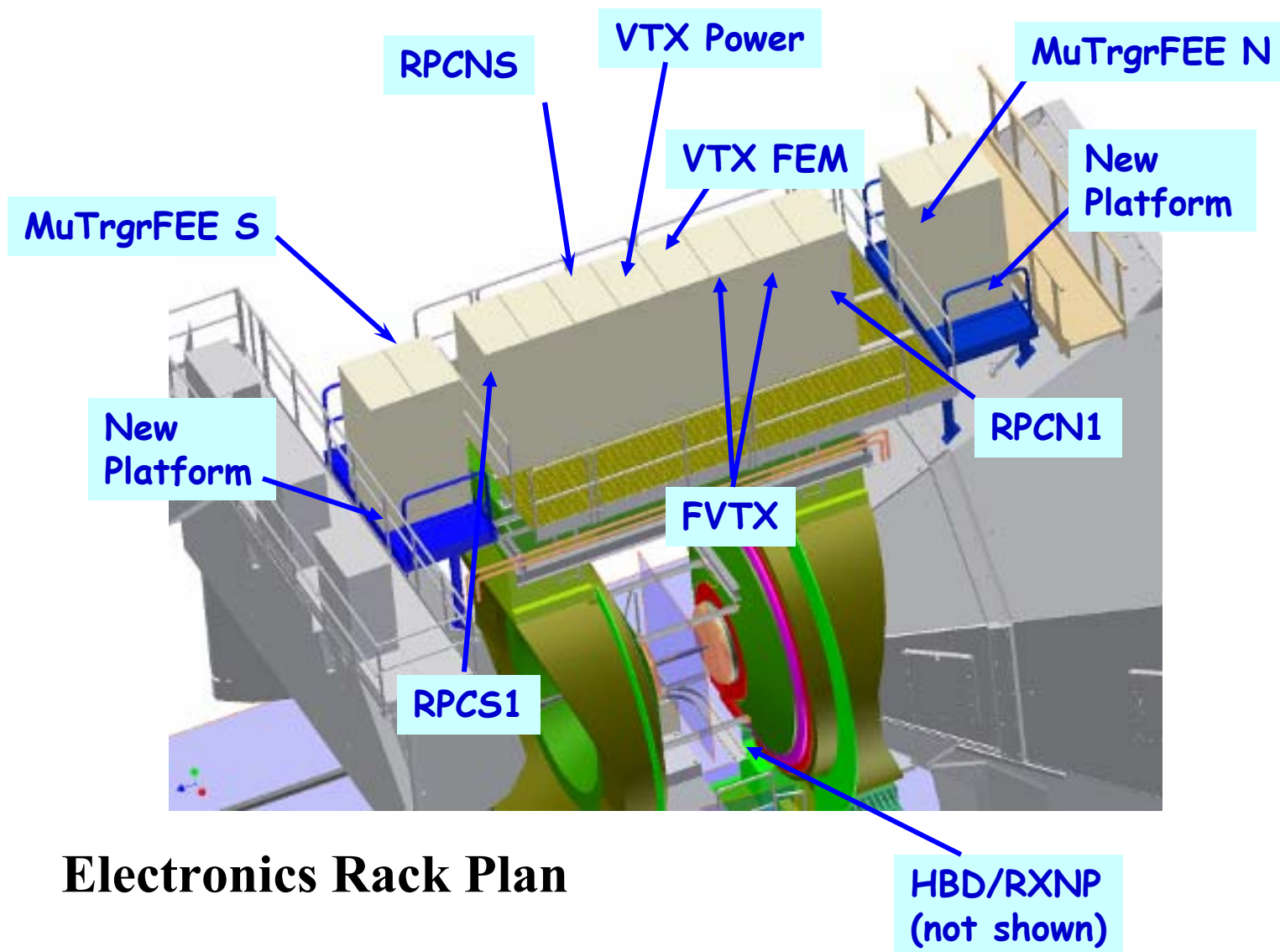
# The PHENIX IR is Almost Full



# Some Available Room in the Central IP Area

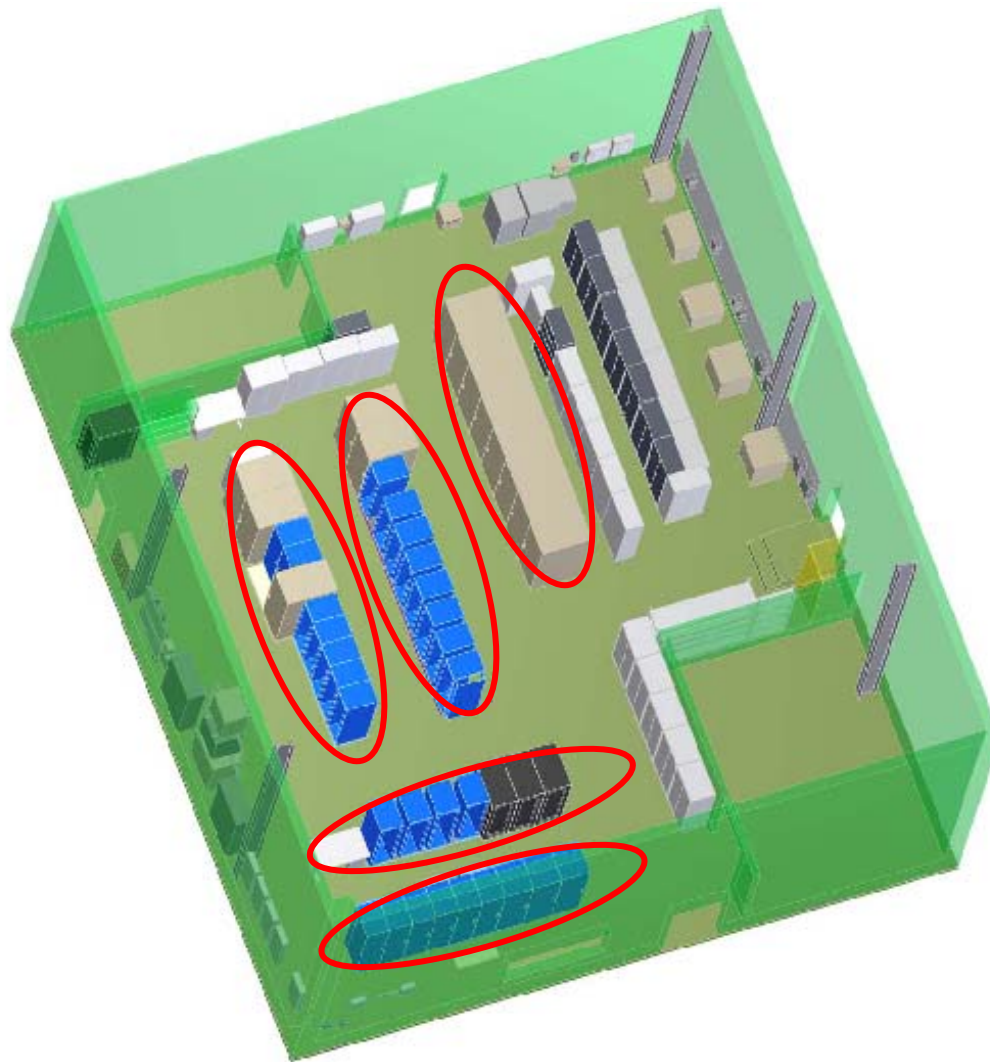






## Electronics Rack Plan

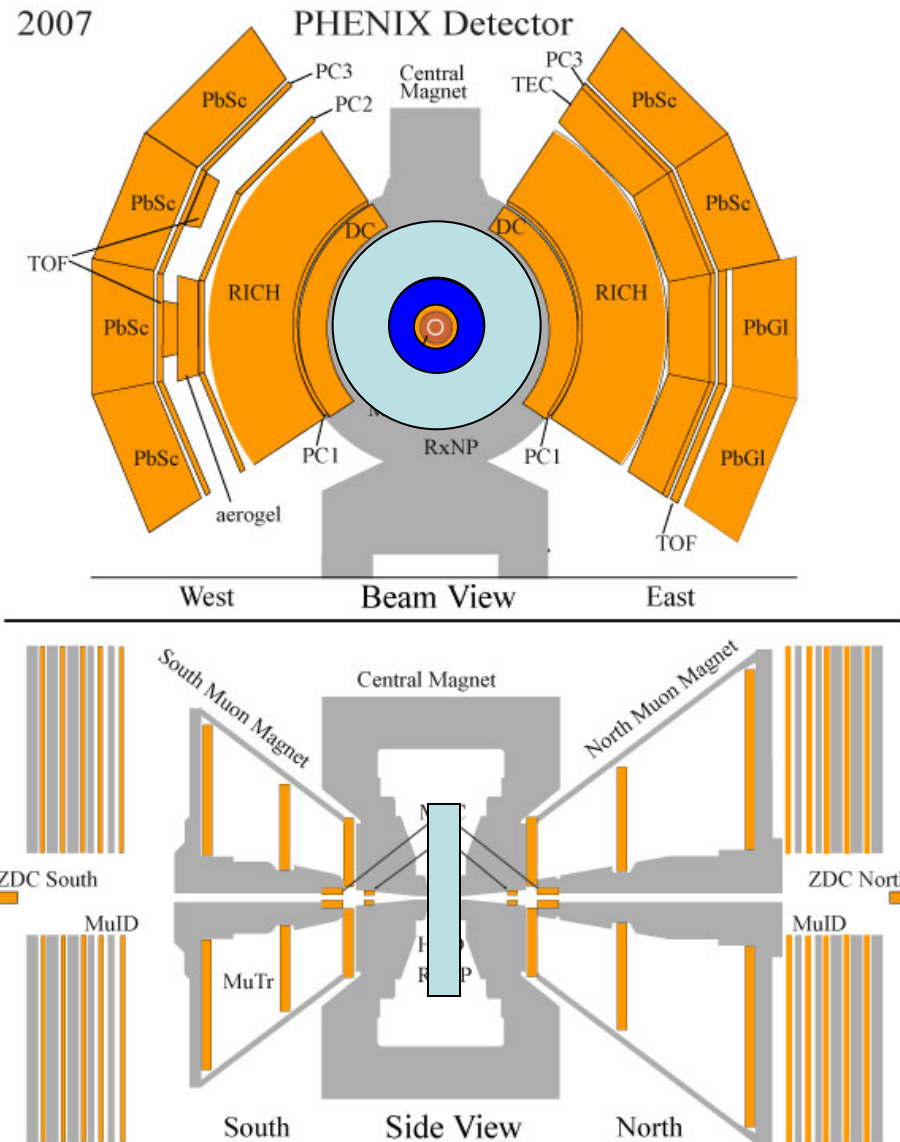
# Some Space Could be Made for Additional Racks in the Rack Room



- **What will be preserved from the present day PHENIX?**
  - Major components of the DAQ (modernized of course)?
  - The Central magnet?
  - The Muon Arms?
  - Either Central Arm?
- **Will the necessary refurbishment of the central tracking be incorporated into the upgrade plans?**
- **Can we devise an upgrade plan that enables incremental installation beginning in ~2015?**
- **Can we devise a plan that does not require us to turn off for  $> 1$  year during installation?**
- **Should part of the detector upgrade be integrated with the EIC project?**

# Components for the Next Round of Upgrades

- **Central Tracking repair or replacement**
- **More Space for Racks and ancillary systems**
- **By project end, a detector installed in 1008 w/ a technical and physics lifetime of 10+ years**
- **A natural incremental installation plan that for the most part fits the annual RHIC run cycle, or at least delay any long shutdown where we can take advantage of possible long EIC installation shutdown**
- **A detector that maintains a physics program for p+p, d(p)+A and A+A**



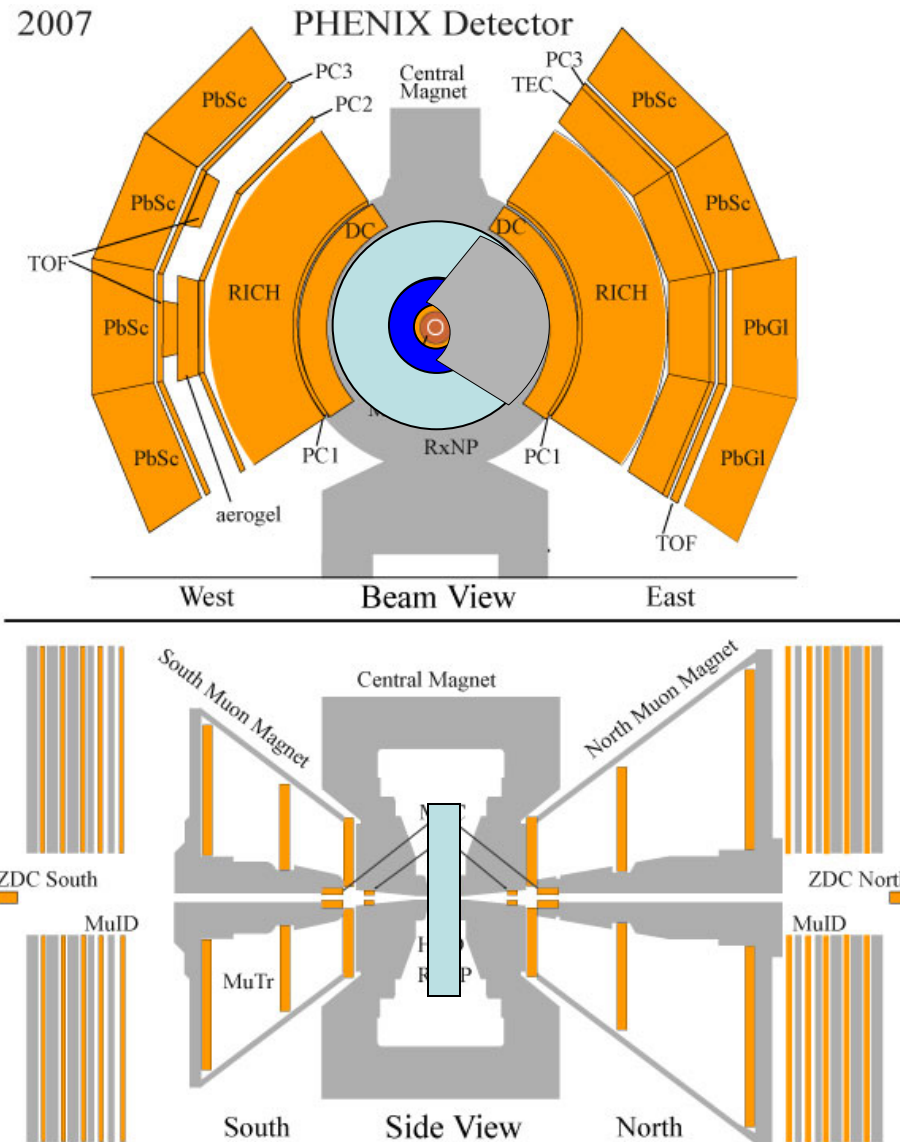


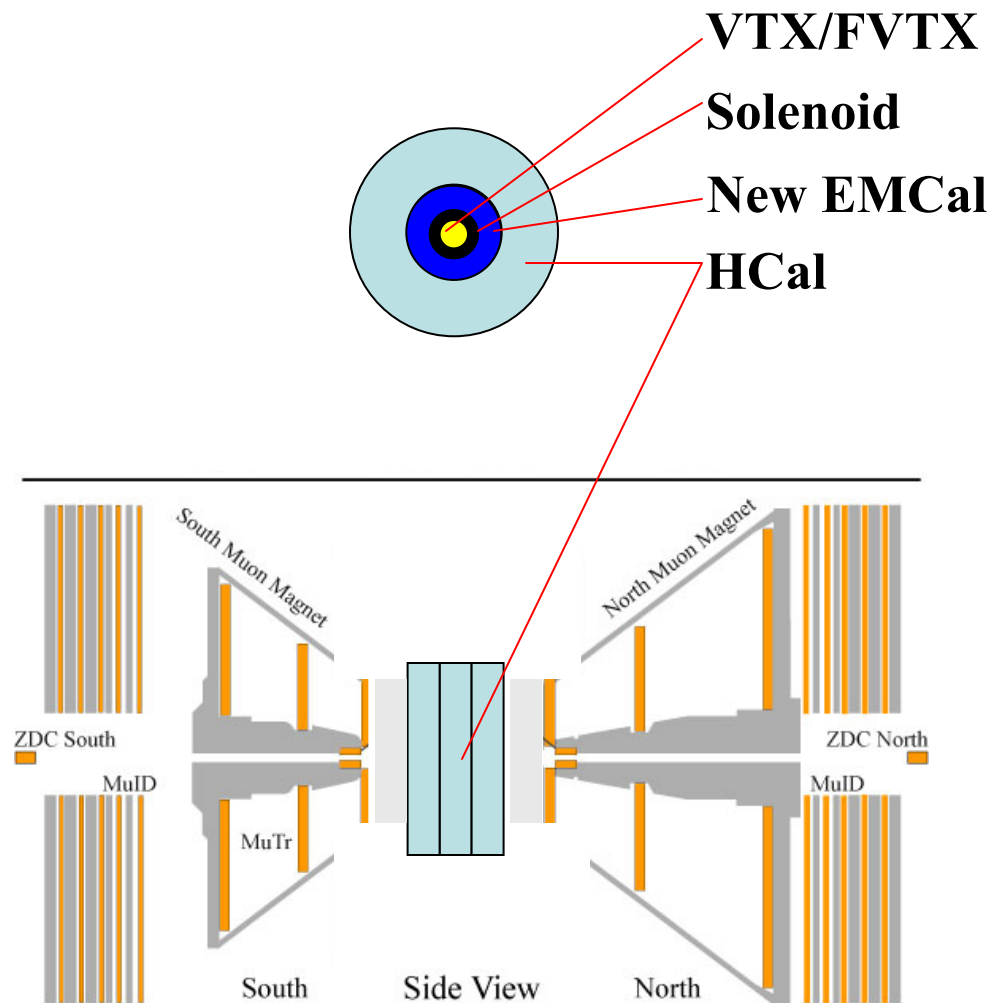
- **Keep the Muon Arms, DAQ and central magnet**
- **Rebuild the East Carriage first**
  - **Replace/Rebuild central tracking**
  - **Keep RICH/EMCal (PbScin only?)**
  - **Increase TOF to 4 sectors w/ mRPC**
- **Build  $3\pi/2$  EM + Hadron Cal next**
  - **Installation eliminates W carriage**
- **Finally replacing the central magnet with a solenoid, complete  $2\pi$  calorimeter coverage**

## Benefits?

- **Phased approach**
- **Preserves much of existing detector**
- **Generates space for more racks, etc. in WC position**
- **Preserves PID capability**
- **Perhaps can avoid 12+ month shutdown**
- **When complete there will be a detector that will run 10+ more years**

# New PHENIX Central Calorimeter





# Summary

- **Space in the 1008 IR is constrained. Major upgrades will likely require major changes in the IR.**
  - **Shortage of space for racks and support systems for instance**
- **As upgrade plan evolves need to adjust it to reality of RHIC shutdown cycle. A long range installation plan that improves PHENIX's physics capability each year has proved very beneficial over the past years.**
- **When this upgrade stage is complete our goal should be to have a detector that is viable for another decade.**

## 1. BHSO Safety Audit -

- No major faults found
- Breaker boxes missing hole plugs
- Some labels need improvement
- Report to follow

## 2. Work Planning

All work done yesterday went as planned

The work permits, on the other hand, resulted in confusion

Need better communication

[http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL\\_SSint-page.htm](http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm)



# Where To Find PHENIX Engineering Info

*Jets decide not to play in Super Bowl this year.*

*My Prediction Colts 37 Saints 27*

*Wait 'til next year. Jets all the way !*



Links for the weekly planning meeting slides, archives of past meeting slides, long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

[http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL\\_SSint-page.htm](http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm)

